

1 Preliminary BioSig user manual: Studies

1.1 Introduction

BioSig has the following features:

1. Laboratory Information Management (LIM), which is labeled as *Resources in the interface*
2. *Experimental design and annotation that is tightly coupled with the LIM*
3. *Experimental design plate layout and minimal set of reagents plates*
4. *Protocol specification*
5. *Automated upload/download of images for a specific experiment*
6. *Visualization of images and computed representation following detailed image analysis*

1.2 Study

In Biosig, "Study" is the most important concept. One study contains one or more "Experiments."

The user defines his experiments with other information stored in the system such as celllines, compounds, and antibodies. The system can generate the plate layout map automatically, which be used by a research assistant to plot the physical plate. The data store in the system can also be used to drive a robot to plot the plate automatically.

To access the Study page, select "Studies" from the menu bar. Users will see the Study List page, as show in Figure 1. From there, the user will be able to start different tasks.

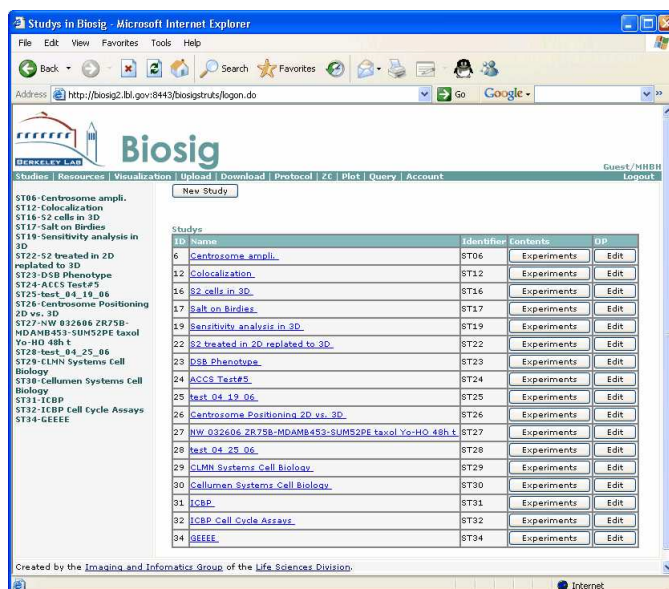


Figure 1: Study List page

1.3 Make a new study

The user goes to the “New Study” page by clicking the “New Study” button. As shown in Figure 2, a study has the following fields:

- Name. The name of the study. Name must be unique across the whole system.
- Description. The description of the study.
- Notes. The notes for the study.
- Global Shared. If this option is not checked, the study and all the experiments in the study will not be visible to people outside the Lab. On the other hand, if this option is selected, the study will be visible to people outside the Lab. But the experiments in the study may or may not be visible, depending on the shared property of each experiment. Shared studies are not editable to people outside.

To save the new study, click the “Save” button.

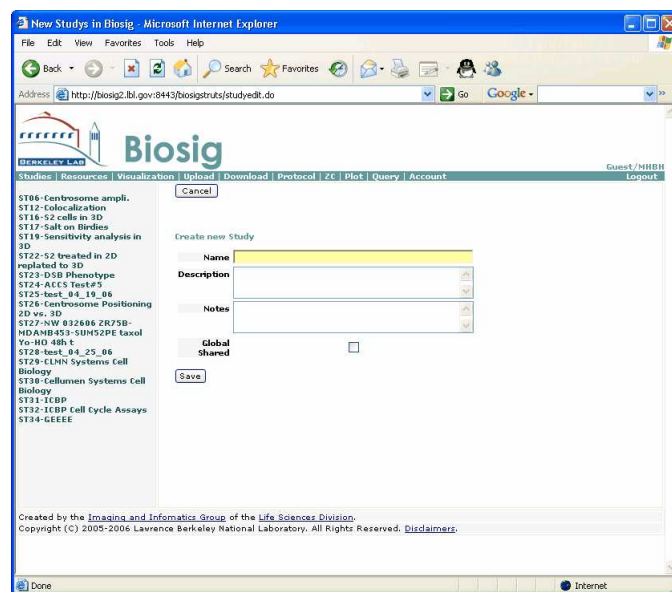


Figure 2: New study page

1.4 Edit a study

Clicking the “Edit” button from Study List or Study View page will take the user to the Study Edit page. It is very similar to the “New Study” page as shown in Figure 2. The user can make changes to the study in this page.

1.5 Make a new experiment

In the “Study View” page, if the user clicks the “New Experiment” button, it will go to the “New Experiment” page as shown in Figure 3. An experiment has the following fields:

- Name. The name of the experiment. Name must be unique across the whole system.
- Description. The description of the experiment.
- Notes. The notes for the experiment.
- Type. The type of the experiment. It is one of the following selections: "Imaging", "Gene Expression", "Protein Array" or "Gene Expression and Protein Array."
- Protocol. The protocol of the experiment.
- LSID. User can define an LSID for this experiment.
- Design Category. The category of this experiment. Different Design Categories have different selections for "Design Type".
- Design Type. The design type of the experiment.
- Global Shared. If this option is not checked, the experiment is not visible to people outside the Lab. If this option is checked, the experiment is visible to people outside only if the study is also shared. Shared experiments are not editable to people outside.
- Copy Experimental Factor. User can copy experimental factors from another experiment to avoid inputting them again.

The screenshot shows the 'New Experiment' page in the Biosig web application. The page is displayed in a Microsoft Internet Explorer browser window. The address bar shows the URL: <http://biosig2.lbl.gov:8443/biosigstruts/experimentedit.do?studyid=34>. The page has a blue header with the 'Biosig' logo and navigation links: Studies | Resources | Visualization | Upload | Download | Protocol | ZC | Plot | Query | Account. The main content area is divided into two sections. On the left is a sidebar with a list of existing experiments, including 'ST08-Centrosome ampl.', 'ST12-Colocalization', 'ST16-S2 cells in 3D', 'ST17-Salt on Bircles', 'ST19-Sensitivity analysis in 3D', 'ST22-S2 treated in 2D replated to 3D', 'ST23-D5B Phenotype', 'ST24-ACCS Test#5', 'ST25-test_04_19_06', 'ST26-Centrosome Positioning 2D vs. 3D', 'ST27-NW 832606 ZR75B-NIDAMB453-SUM52PE taxol Yo-HO 48h t', 'ST28-test_04_25_06', 'ST29-CLMN Systems Cell Biology', 'ST30-Cellumen Systems Cell Biology', 'ST31-ICBP', 'ST32-ICBP Cell Cycle Assays', 'ST34-GEFEE', 'ert', 'dr', 'bp_may31_06', 'may31_2006_v2', 'may31_2006_b3', 'fixed', and 'Helen'. On the right is the 'Create new Experiment' form, which includes fields for Name, Description, Notes, Type (Imaging), Protocol (Simple), LSID, Design Category (BiologicalProperty), Design Type (innate_behavior_design), Global Shared (unchecked), and Copy Experimental Factors (None). A 'Save' button is at the bottom of the form. The footer of the page contains the text: 'Created by the Imaging and Informatics Group of the Life Sciences Division. Copyright (C) 2005-2006 Lawrence Berkeley National Laboratory. All Rights Reserved. Disclaimers.'

Figure 3: New experiment page

1.6 Update an experiment

Clicking the "Edit" button from the "Experiment List" or "Experiment View" page will take the user to the "Experiment Edit" page. It is very similar to the "New Experiment" page as shown in Figure 3. The user can make changes to the experiment in this page.

1.7 Experiment design

The most important work for an experiment is to design its experimental factors, which will be used to generate the plate layout. Clicking the "Experiment Design" button from the "Experiment View" page will take the user to the "Experiment Design" page, as shown in Figure 4. The first step is to select factor types. For Bio Source, there are currently Cell line and Tissue. For Transfection Treatment, we have "DNA", "Virus", and "RNAi". The user can also select Compound Treatment, Radiation Treatment, and Harvest Time for the experiment.

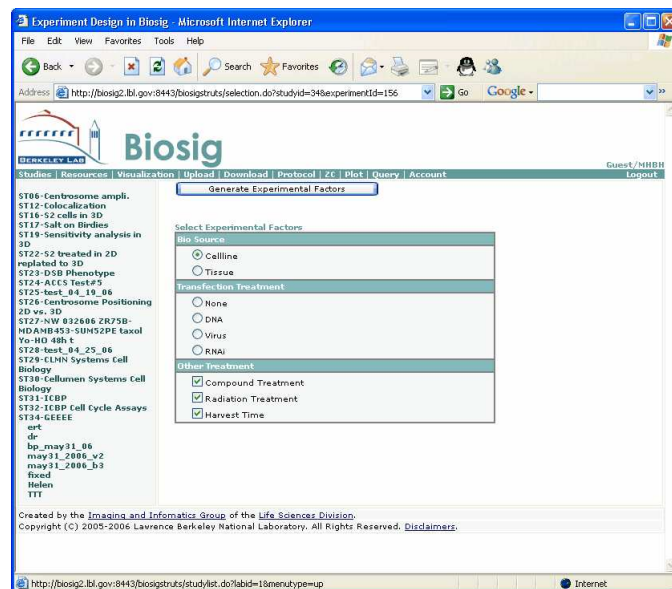


Figure 4: Select experimental factor type

After the experimental factor type is selected, click the "Generate Experimental Factors" button. It will go to the "Experimental Factor Design" page, as shown in Figure 5.

To add a new cell line, the user needs to select the following fields:

- Name. The name of the cell line.
- Passage Number. The Passage number of the cell line.
- Type. 2D or 3D cell line.
- Conc Value. The concentration of the cell line.
- Conc Unit. The concentration unit.
- Co Cultured. The cell line is co-cultured or not.
- Comments. Any comments.

Click "Add" to add the experiment factor or click "Delete" to delete a pre-added cell line. See Figure 6.

To add a new compound, the user needs to select the following fields:

- Name. The name of the compound.

Biosig

Studies | Resources | Visualization | Upload | Download | Protocol | QC | Plot | Query | Account

Guest/MHBR Logout

Show Combination

Cell Culture

Name	Passage #	Type	Conc. Value	Conc. Unit	Co. Cultured	Comments	DP
184A1	0	2D	0.0	cells_per_ml	FALSE		

Add New Cell Culture

Compound Treatment

Name	Combination	Conc. Value	Conc. Unit	Comments	DP
4-Hydroxytan	Steps 1 Fold 2	0.0	cells/well		

Add New Compound Treatment

Radiation Treatment

Name	Energy Value	Energy Unit	Dose Value	Dose Unit	Comments	DP
X-Ray	0.0	GeV/amu	0.0	cGy		

Add New Radiation Treatment

Harvest Time

Time Value	Time Unit	Comments	DP
0.0	N/A(TimeUnit)		

Add New Harvest Time

Figure 5: Experimental Factor Design page

Biosig

Studies | Resources | Visualization | Upload | Download | Protocol | QC | Plot | Query | Account

Guest/MHBR Logout

Show Combination

Cell Culture

Name	Passage #	Type	Conc. Value	Conc. Unit	Co. Cultured	Comments	DP
184A1N4	23456	2D	1000.0	cells_per_ml	FALSE		Delete
184A1	23456	2D	1000.0	cells_per_ml	FALSE		Add

Add New Cell Culture

Compound Treatment

Name	Combination	Conc. Value	Conc. Unit	Comments	DP
4-Hydroxytan	Steps 1 Fold 2	0.0	cells/well		

Add New Compound Treatment

Radiation Treatment

Name	Energy Value	Energy Unit	Dose Value	Dose Unit	Comments	DP
X-Ray	0.0	GeV/amu	0.0	cGy		

Add New Radiation Treatment

Harvest Time

Time Value	Time Unit	Comments	DP
0.0	N/A(TimeUnit)		

Add New Harvest Time

Figure 6: Experiment design

- Serial Dilution. Biosig make it easier for the user to input serial dilution of a compound. The user can select steps and fold for serial dilution and the system will add appropriate experimental factors automatically. See Figure 8 and 9. If it is not a serial dilution, select 1 as the step.
- Conc Value or Init High Conc. The concentration of the Compound. If it is a serial dilution, this is the highest concentration. Each sequential concentration will be divided by the "fold" value.
- Conc Unit. The concentration unit.
- Comments. Any comments.

Click "Add" to add the experiment factor or click "Delete" to delete a pre-set compound. See Figure 7.

The screenshot shows the Biosig Experiment Design interface. The left sidebar lists various studies, including ST06-Centrosome ampl., ST12-Colocalization, ST16-S2 cells in 3D, ST17-Salt on Birdies, ST19-Sensitivity analysis in 3D, ST22-S2 treated in 2D replated to 3D, ST23-DSB Phenotype, ST24-ACCS Test#5, ST25-test_04_19_06, ST26-Centrosome Positioning 2D vs. 3D, ST27-NW 032606, ST28-test_04_25_06, ST29-CLNN Systems Cell Biology, ST30-Cellumen Systems Cell Biology, ST31-ICBP, ST32-ICBP Cell Cycle Assays, ST34-GESEE, ST35-art, ST36-bp_may31_06, and ST37-3D. The main content area has tabs for 'Show Combination', 'Cell Culture', 'Compound Treatment', 'Radiation Treatment', and 'Harvest Time'. The 'Cell Culture' tab is active, showing a table with columns: Name, Passage #, Type, Conc. Value, Conc. Unit, Ex. Cultured, Comments, and DP. The table contains three rows: 184A1N4 (23456, 2D, 1000.0, cells_per_ml, FALSE, Delete), 600MPE (24765, 2D, 200.0, uM, FALSE, Delete), and 184A1 (0, 2D, 0.0, cells_per_ml, FALSE, Add). The 'Compound Treatment' tab is also visible, showing a table with columns: Name, Combination, Conc. Value, Conc. Unit, Comments, and DP. The table contains two rows: Bam HI (checked, 1000.0, uM, Delete) and Serial Dilution (Add). The 'Radiation Treatment' tab is also visible, showing a table with columns: Name, Energy Value, Energy Unit, Dose Value, Dose Unit, Comments, and DP. The table contains one row: X-Ray (0.0, GeV/amu, 0.0, cGy, Add). The 'Harvest Time' tab is also visible, showing a table with columns: Time Value, Time Unit, Comments, and DP. The table contains one row: 0.0 (N/A(TimeUnit), Add).

Figure 7: Experiment design

The screenshot shows the Biosig Experiment Design interface with updated values. The 'Cell Culture' tab is active, showing a table with columns: Name, Passage #, Type, Conc. Value, Conc. Unit, Ex. Cultured, Comments, and DP. The table contains three rows: 184A1N4 (23456, 2D, 1000.0, cells_per_ml, FALSE, Delete), 600MPE (24765, 2D, 200.0, uM, FALSE, Delete), and 184A1 (0, 2D, 0.0, cells_per_ml, FALSE, Add). The 'Compound Treatment' tab is also visible, showing a table with columns: Name, Combination, Conc. Value, Conc. Unit, Comments, and DP. The table contains two rows: Bam HI (checked, 1000.0, uM, Delete) and Serial Dilution (Add). The 'Radiation Treatment' tab is also visible, showing a table with columns: Name, Energy Value, Energy Unit, Dose Value, Dose Unit, Comments, and DP. The table contains one row: X-Ray (0.0, GeV/amu, 0.0, cGy, Add). The 'Harvest Time' tab is also visible, showing a table with columns: Time Value, Time Unit, Comments, and DP. The table contains one row: 0.0 (N/A(TimeUnit), Add).

Figure 8: Experiment design

When there is more than one compound experiment factor, the user can do compound combination or permutation by selecting the appropriate method and number. To limit the number of compound experiment factors participating in the combination or permutation, the user can make selections in the "Combination" column.

To add a new Radiation Treatment, the user needs to select the following fields:

- Name. The name of the radiation.

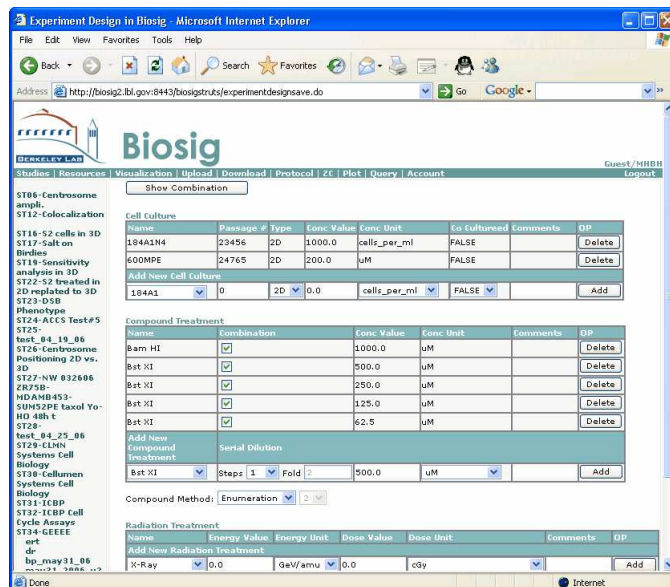


Figure 9: Experiment design

- Energy Value. The energy value of the radiation.
- Energy Unit. The energy unit of the radiation.
- Dose Value. The dose value of the radiation.
- Dose Unit. The dose unit of the radiation.
- Comments. Any comments.

Click "Add" to add the experiment factor or click "Delete" to delete a pre-set radiation. To add a new Harvest Time, the user needs to select the following fields:

- Time value. The name of the harvest.
- Time unit. The unit of the harvest time.
- Comments. Any comments.

Click "Add" to add the experiment factor or click "Delete" to delete a pre-set harvest time.

A completed experiment design is shown in Figure 10

After all experimental factors have been input into the system, the user clicks the "Show Combination" button to go to the "Combination Page", as shown in Figure 11. The combination is a joint production of different experimental factors. For compound, there may also be combination or permutation, if the user selected them in the previous page. The user can select the desired experimental factor combinations in this page. Unselected combinations will not be used in the following pages.

After the selection is made, the user clicks the "Update" button to go to the "Imaging Staining" page, as shown in Figure 12. Imaging Staining is define in groups. The user can make a new group by clicking the "New Group" button, as shown in Figure 13. The user then selects a staining item and adds it to this group by clicking the "Add" button. The user can delete a pre-selected item by clicking the "Delete" button. See Figure 14. To add another group, click the "New Group" button and repeat the process again. See Figure 15.

Experiment Design in Biosig - Microsoft Internet Explorer

Address: http://biosig2.lbl.gov:8443/biosigtrials/experimentdesignave.do

Biosig

Studies | Resources | Visualization | Upload | Download | Protocol | ZC | Plot | Query | Account

Guest / MHBH Logout

Show Combination

ST06-Centrosome ampli.
ST12-Colocalization
ST16-52 cells in 3D
ST17-Salt on Birdies
ST19-Sensitivity analysis
in 3D
ST22-52 treated in 2D
replated to 3D
ST23-D5B Phenotype
ST24-ACS Test#5
ST25-test_04_19_06
ST26-Centrosome
Positioning 2D vs. 3D
ST27-NW 032406 CR75B-
MDAMB453-SUM52PE
taxol Yo-HO 48h t
ST28-test_04_25_06
ST29-CLLN Systems Cell
Biology
ST30-Cellumen Systems
Cell Biology
ST31-ICBP
ST32-ICBP Cell Cycle
Assays
ST34-GEEEE
ert
dr
bp_may31_06
may31_2006_v2
may31_2006_b3
fixed
Helen
TTT

Cell Culture

Name	Passage #	Time	Conc. Value	Conc. Unit	Exp. Culturemed	Comments	DP
184A1N4	23456	2D	1000.0	cells_per_ml	FALSE		Delete
600MPE	24765	2D	200.0	uM	FALSE		Delete

Add New Cell Culture

184A1 0 2D 0.0 cells_per_ml FALSE Add

Compound Treatment

Name	Combination	Conc. Value	Conc. Unit	Comments	DP
Bam HI	<input checked="" type="checkbox"/>	1000.0	uM		Delete
Bst XI	<input checked="" type="checkbox"/>	500.0	uM		Delete
Bst XI	<input checked="" type="checkbox"/>	250.0	uM		Delete
Bst XI	<input checked="" type="checkbox"/>	125.0	uM		Delete
Bst XI	<input checked="" type="checkbox"/>	62.5	uM		Delete

Add New Compound Treatment

4-Hydroxytan Steps 1 Fold 0.0 cells/well Add

Compound Method: Enumeration 2

Radiation Treatment

Name	Energy Value	Energy Unit	Dose Value	Dose Unit	Comments	DP
Fe	200.0	KV	100.0	cGy		Delete
X-Ray	200.0	GeV/amu	60.0	cGy		Delete

Add New Radiation Treatment

X-Ray 0.0 GeV/amu 0.0 cGy Add

Harvest Time

Name Value	Time Unit	Comments	DP
30.0	minutes		Delete
60.0	minutes		Delete
90.0	minutes		Delete
120.0	minutes		Delete

Add New Harvest Time

120.0 N/A(TimeUnit) Add

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Figure 10: Experiment design

Biosig

Studies | Resources | Visualization | Upload | Download | Protocol | ZC | Plot | Query | Account

Guest / MHBH Logout

Update

Combination

Select All Select None

Index	Select	Cell Culture	Compound Treatment	Radiation Treatment	Harvest Time
1	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)
2	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)
3	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)
4	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)
5	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(30.0 minutes)
6	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(60.0 minutes)
7	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(90.0 minutes)
8	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(120.0 minutes)
9	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)
10	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)
11	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)
12	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)
13	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(30.0 minutes)
14	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(60.0 minutes)
15	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(90.0 minutes)
16	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(120.0 minutes)
17	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(250.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)
18	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(250.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)
19	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(250.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)
20	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(250.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)

Figure 11: Combination

After everything is completed on the Imaging Staining page, the user is taken to the BioAssay page by clicking the "BioAssay" button. In this page, the system produces a further joint of experimental factors and imaging staining, as shown in Figure 16. The user selects the combinations to put into the plates.

The "Update" button will then take the user to the "Plate Design" page, as shown in Figure 17. Plate design has the following fields:

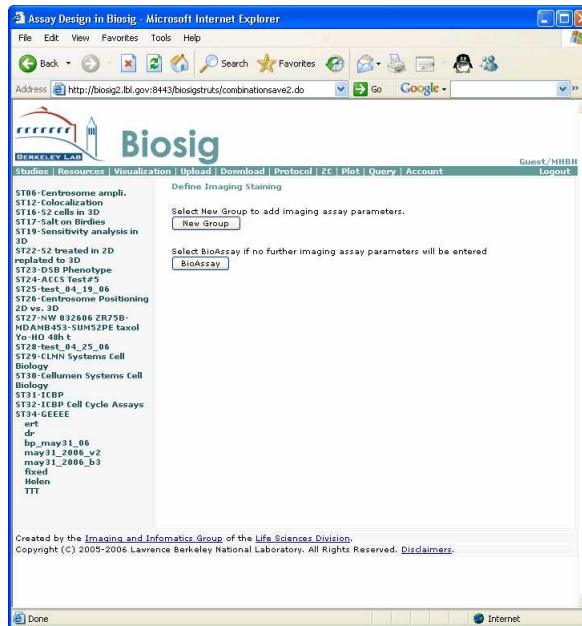


Figure 12: Imaging Staining page

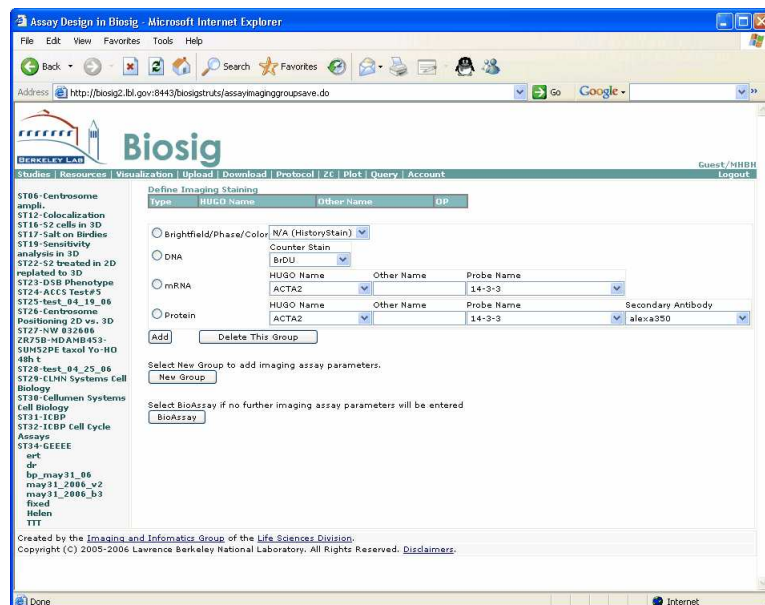


Figure 13: Imaging Staining page

- Plate Type. Select the appropriate size of the plate.
- Number of Duplicate Experiments. This is the number of repeats of one bioassay combination in one plate.
- Number of Replicate Plates. This is the number of repeats of plates. The user can make copies of the same plates.
- Layout Policy. This is the order in which bioassay will be plotted on the plate. It can be Row,

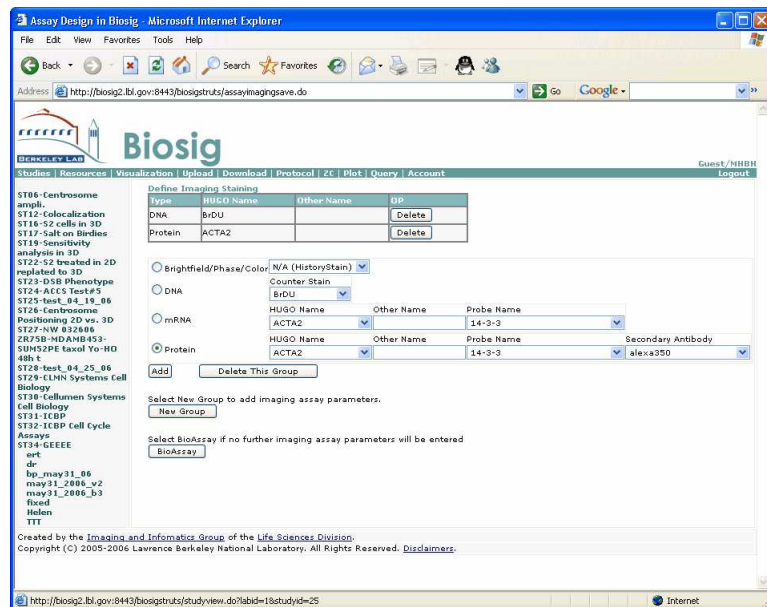


Figure 14: Imaging Staining page

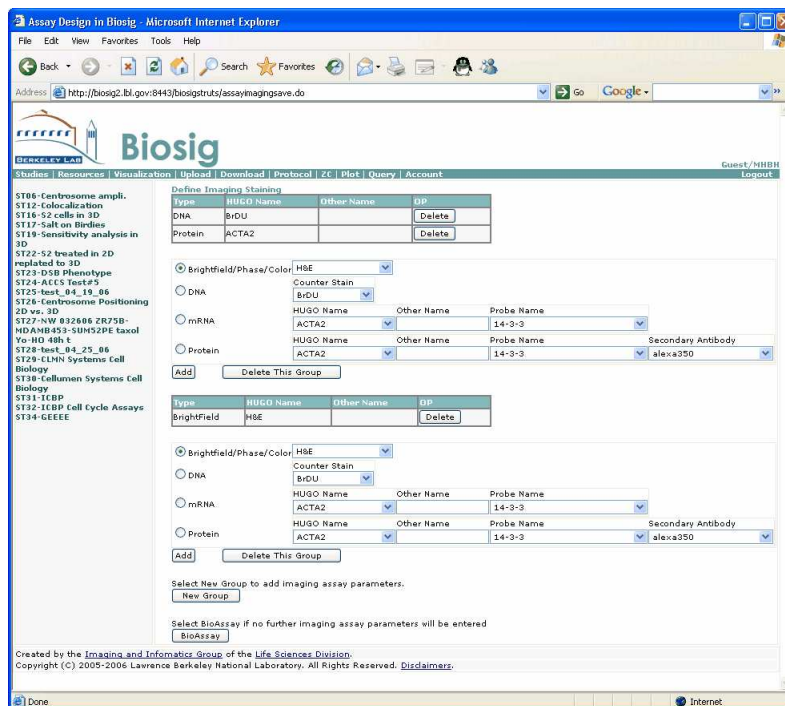


Figure 15: Imaging Staining page

Column, or Block. If Row is selected, the system will try to fully occupy one row first before going to the next one. If Column is selected, the system will try to fully occupy one column before going to the next one.

- Unique Imaging Staining per Plate. If this option is checked, the system will put the bioassay with the same Imaging Staining in one plate.

Index	Select	Cell Culture	Compound Treatment	Radiation Treatment	Harvest Time	Assay Imaging
1	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)	DNA BrDU Protein ACTA2
2	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)	BrightField HSE
3	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)	DNA BrDU Protein ACTA2
4	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)	BrightField HSE
5	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)	DNA BrDU Protein ACTA2
6	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)	BrightField HSE
7	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)	DNA BrDU Protein ACTA2
8	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)	BrightField HSE
9	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(30.0 minutes)	DNA BrDU Protein ACTA2
10	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(30.0 minutes)	BrightField HSE
11	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(60.0 minutes)	DNA BrDU Protein ACTA2
12	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(60.0 minutes)	BrightField HSE
13	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(90.0 minutes)	DNA BrDU Protein ACTA2
14	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(90.0 minutes)	BrightField HSE
15	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(120.0 minutes)	DNA BrDU Protein ACTA2
16	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bam HI(1000.0 uM)	X-Ray(D:60.0 cGy, E:200.0 GeV/amu)	HT(120.0 minutes)	BrightField HSE
17	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)	DNA BrDU Protein ACTA2
18	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(30.0 minutes)	BrightField HSE
19	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)	DNA BrDU Protein ACTA2
20	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(60.0 minutes)	BrightField HSE
21	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)	DNA BrDU Protein ACTA2
22	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(90.0 minutes)	BrightField HSE
23	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)	DNA BrDU Protein ACTA2
74	<input checked="" type="checkbox"/>	184A1N4(1000.0 cells_per_ml 2D)	Bst XI(500.0 uM)	Fe(D:100.0 cGy, E:200.0 KV)	HT(120.0 minutes)	BrightField HSE

Figure 16: BioAssay page

Assay Design in Biosig - Microsoft Internet Explorer

Address: http://biosig2.lbl.gov:8443/biosigstruts/bioassaysave.do

Biosig

Studies | Resources | Visualization | Upload | Download | Protocol | QC | Plot | Query | Account

Guest/NHBB Logout

ST06-Centrosome ampli.
ST12-Colocalization
ST16-S2 cells in 3D
ST17-Salt on Birds
ST19-Sensitivity analysis in 3D
ST22-S2 treated in 2D replated to 3D
ST23-DSB Phenotype
ST24-ACCS Test#5
ST25-test_04_19_06
ST26-Centrosome Positioning 2D vs. 3D
ST27-NW 832606 ZR75B-MDAMB453-SUM52PE taxol Yo-HO 486 t
ST28-test_04_25_06
ST29-ELHN Systems Cell Biology
ST30-Cellumen Systems Cell Biology
ST31-ICBP
ST32-ICBP Cell Cycle Assays
ST34-GEEEE

Plate Layout

Plate Type: 24 well plate

Number of Duplicates: 1

Number of Replicate Plates: 1

Layout Policy: Row

Unique Imaging Assay per Plate: ☐

Update

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Figure 17: Plate Design

After the plate is designed, click the "Update" button, it will take the user to the Plate Display page, as shown in Figure 18.

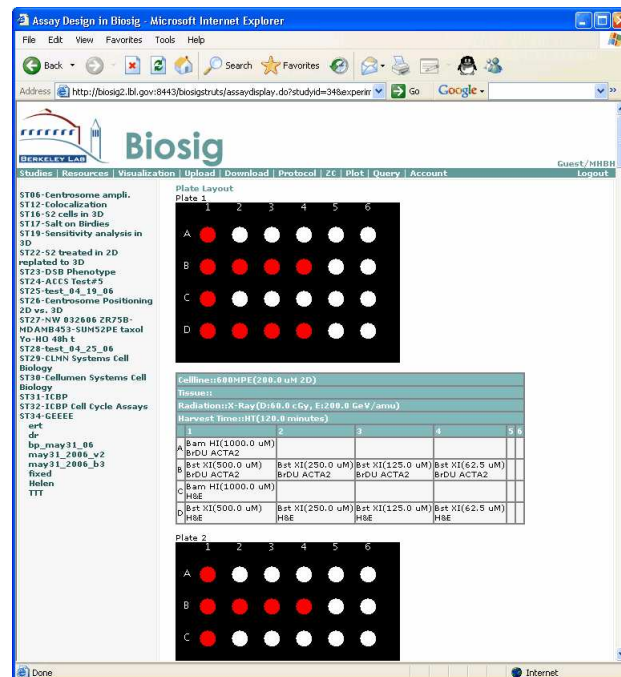


Figure 18: Plate Display

- 2 Resources
- 3 Visualization
- 4 Upload
- 5 Download
- 6 Protocol
- 7 Plot
- 8 Query
- 9 Account
- 10 Others